8.10 Traffic and Transportation

The Henrietta Peaker Project (HPP) consists of a 91.4-megawatt (MW) (net), natural-gas-fired, simple-cycle power plant located approximately 10 miles southwest of Lemoore, California, on a seven-acre portion of a 20-acre parcel owned by GWF Energy LLC. The HPP will interconnect to the existing adjacent Pacific Gas and Electric Company (PG&E) Henrietta Substation through a new 550-foot 70-kilovolt (kV) transmission line supported on two new transmission poles. Other linear facilities include an approximately 16.5-foot water interconnection pipeline (from the site property boundary) and a 2.2-mile Southern California Gas Company natural gas interconnection pipeline. Additionally, approximately five acres will be used for temporary construction laydown and parking.

This section analyzes existing transportation conditions at the HPP site and the potential impacts of the construction and operation of the HPP on the surrounding transportation systems. Section 8.10.1 describes the affected environment in the vicinity of the HPP and existing local and regional transportation conditions. Section 8.10.2 assesses the potential environmental impacts of the construction and operation of the HPP on traffic and the existing transportation system. The analysis focuses on local and regional roadways in the vicinity of the HPP site.

The proposed project will affect transportation systems by temporarily causing small increases in the number of construction-related vehicles on the roadways surrounding the HPP site. Few construction materials and little equipment will be transported to the HPP site by rail and no other (nonroad) transportation resources will be used during the construction or the operation of the HPP. Consequently, no other transportation systems will be affected by the proposed HPP. Section 8.10.3 presents the mitigation measures proposed to minimize the potential impacts of the HPP on traffic and transportation. The laws, ordinances, regulations, and standards (LORS) that apply to traffic and transportation are presented in Section 8.10.4.

8.10.1 Affected Environment

The HPP site is located in an unincorporated area in northwestern Kings County. This section describes existing regional (state routes) and local roadways. Figure 8.10-1 illustrates the regional highways and potential access routes in the HPP study region, at a

1:100,000 scale. This scale provides a broad regional overview of roads and highways on a single map. In addition, Figure 8.10-2 shows the roadways and other transportation resources in the immediate vicinity of the HPP site at a 1:24,000 scale, as required in the California Energy Commission (CEC) Guidance (CEC, 1997).

8.10.1.1 Regional Setting

Kings County has a transportation network of approximately 1,352 miles of surfaced public roads that serves an estimated 1,396 square-mile region. In the western portion of Kings County, State Route (SR) 41 and Interstate (I) 5 are the primary north-south state highways providing regional access to the HPP site. West of the HPP site in Fresno County, SR 269 is a primary north-south regional highway that intersects with SR 198, the main east-west travel corridor in the county, to serve the HPP site. In eastern Kings County, SR 43 is the primary north-south highway. This highway provides regional access to the HPP site via SR 198.

The rail network in Kings County consists of approximately 67 miles of mainline and branchline railroad over which two railroad companies operate. The Burlington Northern Santa Fe (BNSF) Mainline runs north-south through the county and the San Joaquin Valley Railroad runs east-west on the leased Union Pacific (UP) Coalinga Branchline. Neither of these two active railroads provides direct access to the HPP site, and the leg of the UP Coalinga Branchline closest to the HPP site is currently proposed for abandonment.

The HPP site and surrounding vicinity are located in an unincorporated area of Kings County and are therefore under the jurisdiction of the Kings County General Plan and various other transportation-related plans adopted by the county. The following sections describe the framework for managing the transportation resources in the area of the HPP site.

Kings County General Plan Circulation Element. In California, cities and counties are required to adopt circulation elements as part of their general plans. The function of a circulation element is to guide the development of the circulation system in a manner compatible with the land use element of the general plan. The Kings County General Plan Circulation Element sets up goals and provides guidance policies regarding development and related transportation improvements. The Circulation Element also introduces planning tools

essential for achieving local transportation goals and policies (Kings County Planning Department, 2001). The relevant objectives and policies of the Kings County General Plan Circulation Element are listed in Table 8.10-1.

Kings County Hazardous Waste Management Plan (HWMP). The Kings County HWMP includes a hazardous waste transportation plan that defines preferred major and minor routes for hazardous waste transport that connect to regional, state, and interstate highways and railroad systems. The HWMP requires that transporters of hazardous waste in Kings County drive a minimum amount of time on the minor roads specified in the plan, connecting as soon as possible to one of the major hazardous waste transport routes identified in the plan.

Kings County Regional Transportation Plan (RTP). The Kings County Association of Governments (KCAG) is responsible for preparing and administering the Kings County RTP, which establishes regional transportation goals, policies, objectives, and actions for various modes of transportation in the county. The preparation of and guidelines for the RTP are mandated by California Government Code Chapter 2.5, Section 65080, which specifies that the RTP must be updated very two years. The RTP is a long-range (20-year) plan that discusses current and planned intermodal and multimodal transportation activities, outlines funding sources for proposed transportation-related projects, and establishes plans for air quality conformity as required by federal regulations. The current Kings County RTP was adopted in December 1999.

Transportation Improvement Program (TIP). KCAG is required by federal law to develop and publish a TIP at least every two years. The TIP is a short-range (7-year) program that incrementally implements proposed transportation projects identified in the RTP. The TIP consists of project lists from the State Transportation Improvement Program (STIP) for urbanized and nonurbanized areas as well as from other programs that use state and/or federal funding. The current TIP was adopted by KCAG in December 1999.

Kings County Regional Bicycle Plan. The current Kings County Regional Bicycle Plan was adopted by KCAG in 1998 with the objective of accommodating the use of bicycles as an alternative to the automobile. In the HPP vicinity, the Regional Bicycle Plan

identifies planned Class III with Striping (on road) bicycle routes along Jackson Avenue and Avenal Cutoff. The plan also encourages employers to install bicycle parking facilities onsite to encourage bicycle commuting by employees.

Kings County Transit Development Plan (TDP). The current Kings County TDP, prepared by KCAG in August 1998, evaluates current transit services in Kings County and determines future transit needs in the county through 2002. The TDP ensures that the transit system is developed relative to population and traffic growth and recommends plans for service improvements to meet anticipated future transit demand.

State Highways and Regional Roadways. Traffic in the vicinity of the proposed HPP site is served primarily by SR 41, SR 198, and I-5. More distant regional traffic coming to the HPP vicinity would travel along SR 43 and SR 269 (in Fresno County) and connect to SR 198. SR 198 runs east-west across northern Kings County. It is a four-lane divided highway along a 16.98-mile stretch between the Naval Air Station (NAS) Lemoore main gate and SR 43; otherwise SR 198 is a conventional two-lane road. SR 41 transects western Kings County, running north-south along 48.28 miles between Kern and Fresno Counties. It is a two-lane road for 42 miles between the Kern County line and just south of Hanford-Armona Road. There SR 41 becomes a 4-lane expressway for about 6 miles to the Fresno County line, where it narrows again to a two-lane road. I-5 is a four-lane freeway cutting 26.72 miles across the southwestern portion of Kings County. SR 43 is a two-lane north/south expressway that runs along the northwestern quadrant of Kings County. All of these state routes are under the jurisdiction of the California Department of Transportation (Caltrans). Refer back to Figure 8.10-1 for an illustration of the regional transportation setting and primary roadways in the general vicinity of the HPP.

Table 8.10-2 contains the annual average daily traffic (AADT), annual average daily truck traffic, percent of truck traffic, peak hour highway capacity, peak-hour traffic, and level of service (LOS) for the state highways in the HPP vicinity.

LOS criteria and standards for state highways are established by Caltrans. These criteria take into account numerous variables, such as AADT, capacity, grade, environment (urban or rural), and other relevant considerations. According to Caltrans policy, LOS D is

acceptable for planning purposes, whereas LOS E and LOS F are unacceptable. Currently, all of the state highways potentially affected by the proposed HPP are operating at or above LOS C.

As shown in Table 8.10-2, the highest peak hour traffic volume along SR 198 in the immediate HPP vicinity (between Fresno County line and SR 41) is 1,350 vehicles, and the LOS for this stretch of SR 198 ranges from A to C. The percentage of daily truck traffic on SR 198 is 8 percent in the immediate HPP vicinity, and peaks at 16 percent along the segment of SR 198 through the city of Hanford (12th Avenue to SR 43). Along SR 41, the highest peak hour traffic volumes range from 1,000 to 1,050 vehicles between SR 198 and Fresno County. Along this stretch, SR 41 operates at LOS A and LOS B, and trucks constitute up to 15 percent of total traffic. The highest peak hour traffic volume along I-5 is 3,650 vehicles between SR 41 and Avenal Cutoff Road. This segment of I-5 operates at LOS B, and 32 percent of the traffic consists of trucks.

Roadways in the HPP area have accident rates that typically range from 0.15 to 1.72 accidents per million vehicle-miles traveled on freeways and multilane facilities, respectively (Caltrans, 1997b). The range of accident rates for the roadways in the project vicinity is less than the range of statewide averages for similar roadways (the statewide averages are 0.71 for freeways and 2.27 for multilane facilities) (Caltrans, 1997b).

In the vicinity of the HPP site, planned long- and short-range improvements to the regional transportation system (state highways and regional roadways) include the following (KCAG, 1999c):

- SR 198 between SR 43 and Tulare County. Widening of the highway from two lanes to a four-lane expressway. An Environmental Impact Statement for this project was completed in 2000. The estimated date of completion is 2007.
- SR 198 at 19th Ave. Construction of an interchange, estimated to be completed by 2006.
- SR 198 at 9th Ave. Construction of an interchange, estimated to be completed by 2008.
- SR 41 at Grangeville Blvd. Construction of an interchange, estimated to be completed by 2015.

- 18th Avenue from Kansas Ave. to Jackson Ave. Pavement overlay (rehabilitation) to be completed by 2001.
- Grangeville Boulevard from SR 41 to 18th Ave. Pavement overlay (rehabilitation) to be completed by 2002.
- Jackson Avenue from 11th Ave. to 17th Ave. Pavement overlay (rehabilitation) to be completed by 2002.
- Laurel Avenue from 18th Ave. to 20th Ave. Pavement overlay (rehabilitation) to be completed by 2001.
- Laurel Avenue from Avenal Cutoff Rd. to SR 41. Pavement overlay (rehabilitation) to be completed by 2002.

Most of these state highway improvement projects are long-range in scope, and the proposed construction schedules for these projects are not expected to overlap with the construction of the proposed HPP. Some of the pavement rehabilitation projects on regional roadways in the HPP vicinity may occur simultaneously with the construction of the HPP. However, because none of these county-maintained local roadways are critical access routes to the HPP site, if any overlap in construction periods does occur, only minor traffic delays, if any, would result. Currently, no major construction projects are occurring within the immediate vicinity of the proposed HPP, and no new county roads are planned.

8.10.1.2 Local Setting

Local Roadways. The LOS criteria for county-maintained roadway throughway segments, as defined in the Kings County RTP (KCAG, 1999c), are identified in Table 8.10-3. These LOS criteria are similar to the standards established by Caltrans for state highways; they take into account numerous variables, such as AADT, capacity, grade, environment (urban or rural), and other relevant considerations. The Kings County RTP and General Plan Circulation Element specify that LOS D is the minimum acceptable level for planning purposes (LOS E and F are considered unacceptable).

The roadways that would provide access to the proposed HPP site are described in Table 8.10-4, which identifies the roadway classification, average daily traffic volume, average peak hour traffic volume, peak hour roadway capacity, and existing LOS of each roadway affected by the HPP. (See Figure 8.10-3 for annual average daily traffic volumes.) The LOS for

almost all of these local roadways is free-flowing operating conditions with minimal or no congestion (LOS A or LOS B). The following data are not available from Kings County for these roads: annual average daily truck traffic and truck traffic counts.

Kings County has weight and load limits or capacity levels for county-maintained roadways. According to Caltrans, the weight and load limitations for state highways apply to county roadways if the county does not specify its own limitations. For this reason, all the local and regional roadways to be used during the construction and operation of the HPP are subject to a load limit of 80,000 pounds per truck. This load limitation is specified in the California Vehicle Code Section 35780; the California Street and Highways Code Sections 117 and 660–711; and Title 21 California Code of Regulations (CCR) Sections 1411.1 to 1411.6.

Vehicles used during project construction that are over-sized, over-weight, over-width, or over-length will require a transportation permit from Kings County and Caltrans. The transporters (i.e., trucking companies) are responsible for obtaining the necessary transportation permits. The Kings County permits are issued by the Public Works Department. The Caltrans permits are typically issued within two to three hours of receipt of the applications.

Local Railroad Facilities. Neither the BNSF Mainline nor the UP Coalinga Branchline provides direct access to the HPP site, and the leg of the UP Coalinga Branchline closest to the HPP site is currently proposed for abandonment.

8.10.2 Environmental Consequences

8.10.2.1 Significance Criteria

According to the CEC Staff Application for Certification Instructions and those set forth in Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project results in a significant effect when it will:

- Cause a substantial increase in traffic in relation to the existing traffic load and capacity of the street system;
- Cause a substantial deterioration of the roadway surface as a result of construction activities;
- Substantially increase the traffic delay experienced by drivers;

- Substantially alter present patterns of circulation or movement; or
- Cause traffic hazards for pedestrians or operators of motor vehicles or bicycles.

Other potentially significant impacts might include inability to comply with federal and state regulations governing the transportation of hazardous materials and generation of traffic volumes that violate local LOS standards. State and local concerns with regard to traffic analysis focus on avoiding a degradation of public highways/road service below an adopted LOS. Both Caltrans and Kings County consider LOS D and above to be acceptable for planning purposes; any roadway operating at LOS E or LOS F is considered unacceptable, and such conditions must be mitigated to an acceptable LOS.

8.10.2.2 Construction Impacts

The following methods and assumptions were used to estimate the construction traffic impacts associated with the HPP site and the proposed transmission route.

The construction of the HPP will occur over an estimated five months. The project will require a total construction workforce of 75 workers on average, assuming a Monday through Saturday (six-day) workweek. All workers are assumed to be nonlocal (refer to Section 8.8, Socioeconomics). During the peak construction period, an estimated 93 construction workers (all nonlocal) will be required for the HPP. The workforce vehicle trips associated with the construction were calculated based on these assumptions.

Construction Workforce Vehicle Trips. Table 8.10-5 summarizes the vehicle origins and distribution (by county) of the daily average and peak construction workforce. Table 8.10-6 presents the projected number of daily average and peak construction period vehicle trips to be generated by the construction of the HPP.

Table 8.10-5 illustrates the assumed geographical distribution and size of the daily average construction workforce (75 workers) and peak construction workforce (93 workers). The daily vehicle trip generation calculations in Table 8.10-6 are based on the assumption that 20 percent of the workers will carpool with each other (at a rate of two workers per vehicle), and 80 percent of the workers will drive alone in separate vehicles. Each individual driver and carpool

duo is assumed to generate two vehicle trips per day (one round-trip between home and the HPP site).

According to this scenario, the average daily construction workforce of 75 workers will generate 68 one-way and 136 total daily vehicle trips. These trips are a sum of 61 one-way/122 total vehicle trips made by 61 workers (80 percent) driving alone plus 7 one-way/14 total vehicle trips made by 14 workers (20 percent) carpooling. Similarly, the peak construction workforce of 93 workers will generate 84 one-way/168 total daily vehicle trips. These peak construction workforce trips are a sum of 75 one-way/150 total vehicle trips made by 75 workers (80 percent) driving alone, plus 9 one-way/18 total vehicle trips made by 18 workers (20 percent) carpooling.

In summary, construction of the HPP will result in an estimated total of 136 vehicle trips per day, on average, and 168 vehicle trips per day during the peak construction period. It is assumed that parking for construction site personnel and visitors will be provided on or adjacent to the HPP site.

Preferred Travel Routes of Construction Workers: The preferred travel routes of the construction workers for the HPP are as follows:

- Bakersfield/Kern County. The route preferred by construction workers commuting north from Bakersfield/Kern County is assumed to be north on SR 43 and continuing west on SR 198. From SR 198, workers exit south onto 25th Avenue or Avenal Cutoff (and then turn onto 25th Avenue) to access the project site. Alternatively, workers commuting from the south may also travel north along I-5 and exit north onto Avenal Cutoff, then turn north onto 25th Avenue to access the project site.

- Fresno/Fresno County. Workers traveling south from Fresno/Fresno County take either SR 41 or SR 43. They then connect with SR 198 and travel west. From SR 198, workers exit south onto 25th Avenue or Avenal Cutoff (and then turn onto 25th Avenue) to access the project site.

- Tulare County. Workers traveling west from Tulare County travel west along SR 198. From SR 198, workers exit south onto 25th Avenue or Avenal Cutoff (and then turn onto 25th Avenue) to access the project site.

Impacts of Construction Workforce Traffic on State Routes: Construction workforce traffic would generally occur between 5:00 a.m. and 6:00 a.m. and between 6:00 p.m.

and 7:00 p.m., corresponding with a proposed 6:00 a.m. to 6:00 p.m., Monday through Saturday work week. Using the travel pattern assumptions described above, Table 8.10-7 presents the estimated effect of the HPP on state routes in the vicinity of the HPP as a result of the construction workforce commuting to and from the construction site. During the peak construction period (estimated to occur during month four of the five-month construction period), construction-related vehicle traffic will increase traffic on state routes by less than 1 percent. The HPP construction workforce traffic will not lower the existing LOS ratings of the roadways (all roadways will remain at LOS A or LOS B, except one segment of SR 198, which will remain at LOS C). Also, the construction-related increases will be short term, occurring mostly during the peak construction period. Therefore, traffic impacts on state routes in the HPP vicinity are not considered significant.

Impacts of Construction Workforce Traffic on Local Roads: The local roads that provide access from the state routes to the HPP site will be more affected than the state routes by construction workforce traffic commuting to and from the construction site. The projected peak vehicle trips per day and average vehicle trips per day are presented in Table 8.10-7. During the peak construction period, total daily traffic is estimated to increase by up to 4 percent on 25th Avenue but less along other local roadways serving the HPP site. Traffic increases on local roadways will generally occur between 5:00 a.m. and 6:00 a.m. and again between 6:00 p.m. and 7:00 p.m. With these traffic increases the projected peak LOS will remain at LOS A or LOS B on all local roadways serving the HPP site. These minor increases will be short term, occurring mostly during the peak construction period. Therefore, traffic impacts on local roadways serving the HPP vicinity are not considered significant.

Summary of Construction Workforce Traffic Impacts on State Routes and Local Roads: Due to the minimal traffic impacts that will result from the HPP construction workforce and the relatively uncongested traffic conditions along state routes and local roads in the HPP area, the HPP construction workforce will not produce significant traffic impacts.

Construction Equipment and Material Deliveries. Construction of the HPP will require the use and installation of heavy equipment and associated systems. According to the construction schedule, heavy equipment will most likely be delivered during months 2 and 3 of the construction period. However, construction materials (such as concrete, wire, pipe, cables,

fuel, and reinforcing steel) will be delivered continually to the site via trucks. An estimated 620 total truck deliveries will be made to the HPP site over the course of the construction period (see Section 2.0). Deliveries will typically occur between 6:00 a.m. and 6:00 p.m. on weekdays. It is assumed that most of these materials will be transported from either Bakersfield or Los Angeles.

The vehicles used to transport heavy equipment and construction materials will require transportation permits when they exceed the size, weight, width, or length thresholds set forth in Section 35780 of the California Vehicle Code, Sections 117 and 660–711 of the California Streets and Highways Code, and Sections 1411.1 to 1411.6 of the CCR. Affected vehicles will be required to obtain transportation permits from Kings County and Caltrans. Kings County considers the weight/load specifications outlined for Caltrans transportation permits (for state highways) sufficient for travel on county-maintained roadways.

Of the estimated 620 total truck deliveries needed for equipment and materials during construction of the HPP, 112 to 125 of these deliveries will include some amount of hazardous materials (solvents, lube oils, paint, paint thinners, adhesives, batteries, construction gases, etc.) in their original manufacturer containers. Of the estimated 112 to 125 truck deliveries with hazardous materials, total quantities of hazardous materials and subsequent public risk should be relatively low. The only deliveries with large amounts of hazardous materials will be lube oils for the combustion turbines, transformer oil, structural paints, weekly or biweekly deliveries of fuels for construction equipment, initial stocking of construction gases, and weekly or biweekly deliveries of construction gases. Hazardous wastes will be sent from the site to treatment or disposal facilities on a biweekly or monthly basis. Proper containers and transportation procedures that conform to applicable Caltrans requirements (i.e., 49 CFR Chapters II, III; California Vehicle Code Section 31300, et seq.) will be used for all material and waste shipments.

Distribution of Construction Truck Traffic and Routes of Travel: An estimated 620 total truck deliveries will be made to the HPP construction site over the five-month construction period. Months 2 and 3 of construction will likely have the greatest number of material deliveries (approximately 180 deliveries during each month), while the remaining three months of the construction period will average approximately 87 deliveries per month. Assuming an average of 24 workdays per month and two trips (1 round-trip) for each truck

delivery, the HPP construction would generate approximately 7 truck trips per day under average conditions and approximately 15 truck trips per day during the two peak delivery months.

This analysis assumes that an estimated 50 percent of the daily truck deliveries will originate in Kern County (Bakersfield). Truck drivers from Bakersfield will use SR 43 north and continue west on SR 198. From SR 198, drivers will exit south onto 25th Avenue or Avenal Cutoff (and then turn onto 25th Avenue) to access the project site. Alternatively, truck drivers commuting from the south can travel north along I-5, exit north onto Avenal Cutoff, and then turn north onto 25th Avenue to access the project site.

Thirty-five percent of truck deliveries are assumed to originate in Fresno County (Fresno), which is north of the project site. Drivers from Fresno will travel south along either SR 41 or SR 43 to SR 198, proceed west, then exit south onto 25th Avenue or Avenal Cutoff (and then turn onto 25th Avenue) to access the project site.

Fifteen percent of truck deliveries are assumed to originate in Kings County or Tulare County. Drivers from Tulare County and Kings County will travel west along SR 198 and exit south onto 25th Avenue or Avenal Cutoff (and then turn onto 25th Avenue) to access the project site.

Impacts of Construction Truck Traffic on State Routes: Increases of 7 truck trips on state routes during average conditions and 15 truck trips on state routes during peak delivery months are minor compared with existing truck traffic on these routes (see Table 8.10-2) and represent a minimal increase in truck traffic along the proposed routes of travel in the HPP area. Consequently, the impact of delivery truck traffic on state routes is considered less than significant.

Impacts of Construction Truck Traffic on Local Roads: Increases of 7 truck trips on local roads during average conditions and 15 truck trips on local roads during peak delivery months are considered minor compared with existing traffic conditions on these roads and represent a minimal increase in total traffic along the proposed routes of travel (i.e., 25th Avenue and Jackson Avenue). Due to the size and weight of the trucks used for the construction of the HPP, the increase in truck traffic will contribute to wear on the roads and will increase the need

for regular roadway maintenance. However, the increase in roadway wear and tear resulting from construction truck traffic is not considered significant.

Construction Equipment Deliveries by Rail. During the construction of the HPP, a small number of major, heavy equipment components will be delivered to the site by rail. Two transformers for the HPP will be delivered by rail.

Because of the limited number of rail deliveries, no impacts to existing rail service or resources will occur.

Transportation of Construction Debris and Hazardous Wastes. Construction debris and small quantities of hazardous wastes will be generated during construction (see Section 8.13, Waste Management). During construction, a minimal number of truck trips per month will be required to haul waste for disposal. Transportation of hazardous materials to and from the HPP site will be conducted in accordance with California Vehicle Code Sections 31300 et seq. and the Kings County HWMP. Because the transport of hazardous wastes will be conducted in accordance with the relevant transportation regulations, no significant impact is expected.

8.10.2.3 Operation and Maintenance Impacts

Impacts on State Routes and Local Roads. The operation of the HPP will be conducted by personnel from the GWF Hanford facility on an as-needed basis. The HPP will operate up to a maximum of 8,000 hours per year. Due to the minimal number of vehicle trips generated by HPP operations personnel, the long-term traffic impacts are considered insignificant.

During the operation of the HPP, a minimal number of hazardous materials deliveries will be made to the HPP site. The hazardous materials to be delivered to the HPP site will include one to three truck deliveries per month of aqueous ammonia; one truck delivery per month of Nalco water treatment chemicals; one truck delivery every three months of process gases (nitrogen, nitric oxide, and carbon monoxide); and one truck delivery per year of each of the following: liquid carbon dioxide, diesel fuel, and combustion turbine generator waterwash soap. The anticipated travel routes for hazardous materials deliveries from the Bakersfield,

Fresno, Hanford-Lemoore, and Visalia areas will be along SR 99, SR 198 and 25th Avenue. Overall, the number of delivery trips will be minimal and the traffic impacts will not be significant.

Some of the hazardous materials generated at the HPP site during plant operations will be transported to a Class I landfill for disposal or transported offsite for recycling. It is estimated that hazardous wastes generated at the site will be transported offsite for disposal about once every 90 days or less by licensed hazardous waste transporters. Overall, the number of transport trips will be minimal and the traffic impacts will not be significant.

The traffic associated with the operation of the transmission line will be minimal and will be limited to preventive maintenance vehicles or repair vehicles required in the event of damage to the lines. The overall impacts of the traffic generated by the operation and maintenance of the HPP transmission line will not be significant.

Impacts on Local Railroads. The operation of the HPP is not anticipated to include any routine or periodic deliveries via local or regional railroads. Because any such deliveries would be nonroutine and limited, no impacts to rail services will occur.

8.10.2.4 Cumulative Effects

The available capacity of the regional state routes serving the Kings County area shows that the regional transportation system has ample capacity to accommodate the traffic resulting from the construction and operation of the HPP. There are no other known proposed projects whose workforces and/or material deliveries would concurrently travel the state routes and local roadways to be used for the HPP. Therefore, no significant cumulative traffic impacts are anticipated to result from the HPP.

8.10.2.5 Potential Indirect Effects

The potential indirect effects of the HPP are effects that may result from the implementation of the project but are not directly related to the project itself. Operation of the HPP is not expected to indirectly result in or generate new growth or construction in the HPP project area that may result in impacts to transportation resources. Due to the limited number of personnel and material deliveries required for HPP operation, the HPP will not necessitate or

result in demand for additional public transportation services, facilities, or infrastructure. Therefore, no potential indirect effects to transportation resources are anticipated to result from the HPP.

8.10.3 Mitigation Measures

8.10.3.1 Construction

The construction of the HPP will add a minimal amount of traffic to state routes and local roadways on average and during the peak construction period. Because existing roadway capacity is adequate, these project-related traffic increases will not result in significant impacts. Therefore, no construction-related mitigation measures are required for the HPP.

8.10.3.2 Operation and Maintenance

The operations-related traffic associated with the HPP is considered to be minimal; state routes and local roadways have adequate capacity to accommodate operations-related traffic. Consequently, no operations-related mitigation measures are required for the HPP.

8.10.4 Laws, Ordinances, Regulations, and Standards

8.10.4.1 Federal

49 Code of Federal Regulations (CFR), Chapter II, Subchapter C and Chapter III, Subchapter B. Standards for the transportation of hazardous materials are covered in Chapter II, Subchapter C. National safety standards for the transport of goods, materials, and substances over public highways are addressed in Chapter III, Subchapter B, Parts 171–173, 177–178. Caltrans is the administering agency for these requirements.

The proposed HPP will cause no traffic or transportation impacts that would be inconsistent with federal LORS.

8.10.4.2 State

California Vehicle Code Section 35780; California Streets and Highways Code Sections 117 and 660–711; 21 CCR Sections 1411.1–1411.6. These codes cover the permit requirements for "overload" approvals (transportation permits) for travel over state highways.

California Streets and Highways Code Sections 117 and 660–711. This code requires permits for any construction, maintenance, or repair involving encroachment on state highway rights-of-way.

California Vehicle Code Sections 31300 et seq. This code includes provisions for the transportation of hazardous materials on state highways.

The HPP will cause no traffic or transportation impacts that would be inconsistent with state LORS.

8.10.4.3 Local

Kings County General Plan Circulation Element. The Circulation Element of the Kings County General Plan establishes goals and policies and identifies implementation measures for the traffic and transportation systems in the unincorporated areas of the county.

Kings County Hazardous Waste Management Plan. The goal of the Kings County HWMP is to ensure safe and effective management and transport of hazardous waste within the county. Various policies concerning the transport of hazardous materials in and through Kings County are detailed in the HWMP.

Kings County Regional Transportation Plan and Transportation Improvement Plan. The Kings County RTP, administered by KCAG, establishes regional transportation goals, policies, objectives, and actions for various modes of transportation, including intermodal and multimodal transportation activities. Funding to implement the transportation activities proposed in the RTP is programmed through the Kings County TIP.

Kings County Regional Bicycle Plan. The Kings County Regional Bicycle Plan, administered by KCAG, describes existing bicycle facilities and details proposed locations for new bicycle routes and amenities in the county. The plan advocates bicycling as an alternative to vehicular transportation to achieve potential improvements in traffic congestion and air quality.

Kings County Transit Development Plan. The Kings County Transit Development Plan, administered by KCAG, analyzes future transit needs and itemizes the necessary future service requirements needed to make public transit more efficient and accessible.

The HPP will cause no significant traffic or transportation impacts that would be inconsistent with local LORS.

8.10.5 Involved Agencies and Contacts

Agency	Contact	Telephone
Kings County Planning Department	Dennis Mills, Transportation Planner	(559) 582-3211 x2684
Kings County Planning Department	David Lear, Transportation Planner	(559) 582-3211 x2676
Kings County Planning Department	Chuck Kinney, Planner	(559) 582-3211 x2674
Kings County Public Works Department, Roads Division	Anthony Gomes, Road Superintendent	(559) 582-3211 x2694
California Department of Transportation	Larry Waggle	(916) 653-1655

8.10.6 Compliance with Laws, Ordinances, Regulations, and Standards

All applicable LORS and the administering agencies are summarized in Table 8.10-8. Table 8.10-8 also lists the sections that discuss how the HPP will conform with all applicable LORS pertaining to traffic and transportation impacts.

8.10.7 Proposed Conditions of Certification

Proposed conditions of certification are contained in Appendix K. These conditions are proposed in order to ensure compliance with applicable LORS and/or to reduce potentially significant impacts to less-than-significant levels.

8.10.8 References

Caltrans, 1997a. *1997 Truck Traffic on the California State Highway System*. California Department of Transportation.

Caltrans, 1997b. *1997 Route Segment Report.* California Department of Transportation.

Caltrans, 1998. *1998 Traffic Volumes on California State Highways.* California Department of Transportation.

CEC, 1997. *Siting Regulations: Rules of Practice and Procedure and Power Plant Site Certification Regulations.* California Energy Commission.

KCAG, 1998. *Kings County Transit Development Plan.* Kings County Association of Governments. August.

KCAG, 1999a. *County of Kings Regional Traffic Count Report.* Kings County Association of Governments. September.

KCAG, 1999b. *Federal Transportation Improvement Program.* Kings County Association of Governments. December.

KCAG, 1999c. *Kings County Regional Transportation Plan.* Kings County Association of Governments. December.

Kings County Planning Agency and McLaren Environmental Engineering, Inc., 1989. *1988 Kings County Hazardous Waste Management Plan*. January 31.

Kings County Planning Department, 2001. *Kings County General Plan Circulation Element.* Amendment No. 9. January 30.

TABLES

Table 8.10-1
Relevant Objectives and Policies of the
Kings County General Plan Circulation Element

Relevant Objectives	Relevant Policies
Objective 28.3: Provide a bicycle route system which meets the transportation and recreation needs of Kings County residents.	• Policy 28i: Through the RTP, designate a bicycle route plan which consists of a system of bicycle routes connecting major residential, commercial, employment, educational, and recreational areas. • Policy 28m: Designate the Kings County Department of Public Works as the agency responsible for establishing and maintaining bicycle routes along roadways in unincorporated areas. • Policy 28o: Consider methods to accommodate bicycle and pedestrian traffic in new development.
Objective 29.1: Design circulation systems that provide access to employment, commerce and markets, and recreational and residential areas of the county; promote safety; and minimize traffic congestion and air pollution.	• Policy 29d: Assure that new parcels of land have frontage on, or access to, a public road. • Policy 29f: Streets in industrial and commercial zones are to be designed to accommodate the needs of truck and non-truck traffic with as little conflict as possible. • Policy 29h: The goals, objectives, and siting criteria of the *Kings County Hazardous Waste Management Plan* as they pertain to hazardous waste transportation are incorporated herein by reference.
Objective 29.2: Approve development only when there are adequate circulation facilities to serve it, or the installation of new facilities to handle increased demand is made a condition of approval.	• Policy 29i: Review proposed circulation systems to ensure there will be no unmitigated adverse effects. • Policy 29j: Require all developers to pay the cost of mitigating the impacts of their developments on existing roads and highways; and to pay the cost of new roads necessary to serve their developments, and to provide the mechanism for assuring the continued maintenance of such roads. • Policy 29l: The minimum level of service (LOS) for intersections in Kings County shall be "D". For State highways other operational LOS standards will be considered. For more specific information about level of service see the Glossary or the RTP. As the RTP is updated, any significant findings that may affect this Circulation Element will be revisited within this document and updated as appropriate, including mitigation. • Policy 29m: Where precise plan lines or ultimate right of way lines exist, require their dedication as a condition of development approval.

Source: Kings County Planning Department, 2001.

Table 8.10-2
Current Traffic Characteristics of the Interstate Highways and State Routes in the Project Area

Highway/ Milepost	Location	Annual Average Daily Traffic	Annual Average Daily Truck Traffic	Percent of Truck Traffic[a]	Peak-Hour Highway Capacity	Peak-Hour Traffic	LOS
Interstate 5							
0.0 – 16.6	Kern Co. – SR 41	24,600	7,870	32%	3,720	3,550	B
16.6 – 25.4	SR 41 – Avenal Cutoff Rd.	25,000	8,000	32%	3,720	3,650	B
25.4 – 26.7	Avenal Cutoff Rd. – Fresno Co.	24,300	7,780	32%	3,720	3,500	B
State Route 41							
8.1 – 16.3	SR 33 – Interstate 5	5,200	730	14%	1,620	570	A
16.3 – 28.4	Interstate 5 – Nevada Ave.	7,600	1,060	14%	3,720	840	C
28.4 – 37.8	Nevada Ave.– Jackson Ave.	6,000	840	14%	1,900	800	A
37.8 – 40.1	Jackson Ave. – SR 198	11,700	1,170	10%	1,900	990	B
40.1 – 42.1	SR 198 – Hanford-Armona Rd.	12,100	970	8%	1,920	1,050	B
42.1 – 48.3	Hanford-Armona Rd. – Fresno Co.	12,400	990 - 1860	8% - 15%	3,840	1,000	A
State Route 43							
16.4 – 18.2	Houston Ave. – SR 198	7,600	1,750	23%	1,860	660	B
18.2 – 22.3	SR 198 – 10th Ave.	8,200	1,310	16%	1,840	790	B
State Route 198							
0.0 – 3.0	Fresno Co. - NAS Lemoore	6,900	550	8%	1,900	610	B
3.0 – 5.0	NAS Lemoore – Avenal Cutoff Rd.	11,800	940	8%	3,800	1,100	C
5.0 – 8.9	Avenal Cutoff Rd. – SR 41	14,500	1,160	8%	3,880	1,350	A
8.9 – 15.8	SR 41 – 16th Ave.	12,500	1,130	9%	3,880	1,200	A
15.8 – 17.1	16th Ave. – 12th Ave	21,000	2,310	11%	3,880	1,800	B
17.1 – 21.0	12th Ave. – SR 43	17,000	2,720	16%	3,880	1,450	A
21.0 – 28.3	SR 43 – Tulare Co.	13,500	2,020	15%	1,800	1,150	A

[a] Percent of trucks in 1996 ADT.
Source: 1999 Kings County Regional Transportation Plan

LOS = Level of Service
NAS = Naval Air Station
SR = State Route

Table 8.10-3
Kings County Level of Service (LOS) Definitions

LOS	Description
A	Free flow; insignificant delays
B	Stable operation; minimal delays
C	Stable operation; acceptable delays
D	Approaching unstable; queues develop rapidly but no excessive delays
E	Unstable operation; significant delays
F	Forced flow; jammed conditions

Source: KCAG, 1999c.

Table 8.10-4
Existing Traffic Characteristics of Local Roadways in the Immediate Vicinity of the Henrietta Peaker Project

Roadway	Location	Roadway Classi-fication	Average Daily Traffic Volume	Average Peak Hour Traffic Volume	Peak Hour Roadway Capacity	LOS
Avenal Cutoff Rd.	SR 269 to Nevada Ave.	Arterial, 2 lane	3,500	290	1,796	B
	Nevada Ave. to SR 198	Arterial, 2 lane	4,000	510	1,718	B
Jackson Ave.	SR 198 to SR 41.	Arterial, 2 lane	500	90	1,484	A
	SR 41 to 18th Ave.	Arterial, 2 lane	700	90	1,404	A
25th Ave.	Avenal Cutoff to SR 198	Arterial, 2 lane	3,000	N/A	N/A	A

Source: KCAG, 1999c.

LOS = Level of Service
N/A = Not Available
SR = State Route

Table 8.10-5
Construction Workforce Distribution

Worker (Vehicle) Origin	Daily Distribution of Workforce	Daily Average Workforce[a]	Peak Distribution of Workforce	Peak Workforce[b]
Bakersfield/Kern County	50%	38	50%	46
Fresno/Fresno County	35%	26	35%	33
Kings/Tulare Counties	15%	11	15%	14
Total	**100%**	**75**	**100%**	**93**

[a] The daily average workforce is based on an average of months 1, 2, 3, and 5 of the five-month construction period.
[b] The peak workforce is based on month 4 of the five-month construction period.

Table 8.10-6
Total Daily Construction Workforce Vehicle Trip Generation

Origin / Destination of Worker Trips	Trip Distribution[a]	Average Daily Workforce One-way Trips[b]	Average Daily Workforce Total (Two-way) Trips[b]	Peak Workforce One-way Trips[b]	Peak Workforce Total (Two-way) Trips[b]
Bakersfield / Kern County	50%	34	68	42	84
Fresno / Fresno County	35%	24	48	29	59
Kings / Tulare Counties	15%	10	20	13	25
Total	**100%**	**68**	**136**	**84**	**168**

[a] Combination of construction and contractor labor force.
[b] This analysis assumes that 20% of the workforce will carpool. Columns may not add because of rounding.

Table 8.10-7
Distribution of Construction Worker Generated Traffic on State Routes and Local Roadways

			Daily Average Construction Period		Peak Construction Period		
Highway/Roadway	Existing AADT	Existing LOS	Projected Total Vehicle Trips/Day	AADT Increase	Projected Total Vehicle Trips/Day	Increase in Vehicle Trips/ Day	Projected LOS
Interstate 5							
Kern Co. to SR 41	24,600	B	34	<1%	42	<1%	B
SR 41 to Avenal Cutoff	25,000	B	34	<1%	42	<1%	B
SR 41							
SR 198 to Grangeville	12,400	A	24	<1%	30	<1%	A
Grangeville to Fresno Co.	11,700	A	24	<1%	30	<1%	A
SR 43							
Houston Ave. to SR 198	7,600	B	3	<1%	42	<1%	B
SR 198 to 10th Ave.	8,200	B	24	<1%	29	<1%	B
SR 198							
Lemoore to Avenal Cutoff	11,800	C	51	<1%	63	<1%	C
Avenal Cutoff to SR 41	14,500	A	102	<1%	126	<1%	A
SR 41 to 16th Ave.	12,500	A	78	<1%	96	<1%	A
16th Ave. to 12th Ave.	21,000	B	78	<1%	96	<1%	B
12th Ave. to SR 43	17,000	A	78	<1%	96	<1%	A
SR 43 to Tulare Co.	13,500	A	20	<1%	25	<1%	A
Avenal Cutoff							
SR 269 to Nevada Ave.	3,500	B	34	1%	42	1%	B
Nevada Ave. to SR 198	4,000	B	85	2%	105	3%	B
Jackson Avenue							
SR 198 to SR 41	500	A	0	0%	0	0%	A
SR 41 to 18th Ave.	700	A	0	0%	0	0%	A
25th Avenue							
North of site	3,000	A	51	2%	63	2%	A
South of site	3,000	A	85	3%	105	4%	A

AADT = Annual Average Daily Traffic
LOS = Level of Service
SR = State Route

Table 8.10-8
Compliance With Laws, Ordinances, Regulations, and Standards

Authority	Administering Agency	Requirements	Compliance	AFC Conformance Section
49 CFR, Chapter II, Subchapter C and Chapter III, Subchapter B	U.S. Department of Transportation and California Department of Transportation (Caltrans)	Requires proper handling and storage of hazardous materials during transportation.	Project and transportation will comply with all standards for the transportation of hazardous materials.	8.10.2.2, 8.10.2.3
California Vehicle Code Section 35780; California Streets & Highways Code Sections 660–711; 21 CCR 1411.1–1411.6	Caltrans	Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	Transportation permits will be obtained by transporters for all overloads, as required.	8.10.2.2
California Streets & Highways Code Sections 117, 660–711	Caltrans	Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery.	Encroachment permits will be obtained by transporters, as required.	8.10.2.2
California Vehicle Code Section 31300 et seq.	Caltrans	Requires transporters to meet proper storage and handling standards for transporting hazardous materials on public roads.	Transporters will comply with standards for transportation of hazardous materials on state highways during construction and operations.	8.10.2.2, 8.10.2.3
Circulation Element of the Kings County General Plan	Kings County Planning Department	Specifies long-term planning goals and procedures for transportation infrastructure system quality in Kings County.	Project will comply with goals and policies for county transportation and traffic system.	8.10.2.2, 8.10.2.3
Kings County Hazardous Waste Management Plan	Kings County Planning Department	Specifies goals for the safe and effective transfer of hazardous wastes through the county.	Transporters will comply with standards for transportation of hazardous materials on county-maintained roadways and state highways during construction and operations.	8.10.2.2, 8.10.2.3

CCR = California Code of Regulations
CFR = Code of Federal Regulations

FIGURES